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Title: Enhanced Multiple Exciton Generation in PbS
CdS Janus-like Heterostructured Nanocrystals

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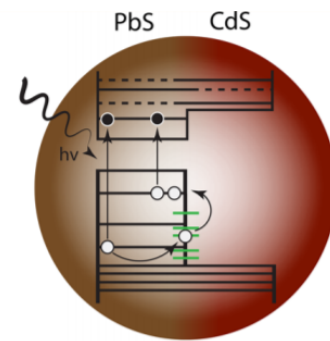
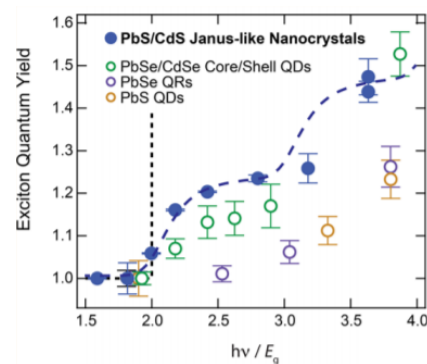
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Enhanced Multiple Exciton Generation in PbS|CdS Janus-like Heterostructured Nanocrystals

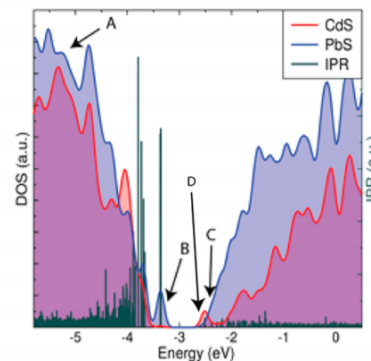
PI: Kirill A. Velizhanin (T-1)

IC Annual Report for w18_solarcells

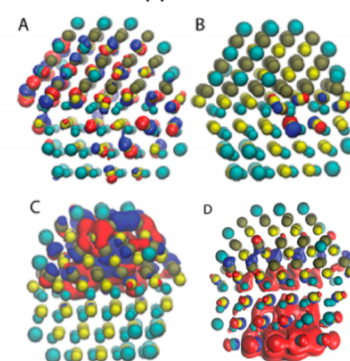
1. Conducted state-of-the-art *ab initio* calculations on PbS|CdS Janus nanoparticles, illustrating enhanced Multiple Exciton Generation leading to high solar cell efficiencies
2. Demonstrated the importance of effective Coulomb interactions and a reduced hot exciton cooling rate, through analysis of the valence band interfacial states



(a)



(b)



We used first principles simulations to guide engineering of nanoparticle solar cells by investigating MEG in NP heterostructures